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Lab Laurels
September 2002

SME selects AFRL scientist as fellow

by Tim Anderl, Materials and Manufacturing Directorate

John Maguire

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — An Air Force Research Laboratory's Materials and Manufacturing Directorate scientist was recently selected as a Society of Manufacturing Engineers Fellow for his outstanding contributions to the field of manufacturing.

John Maguire, a research leader and principal engineer for the directorate's Manufacturing Technology Division Materials Process Design Branch, will be inducted to the SME College of Fellows during the SME Fall Board Meeting in Charlotte, N.C., Nov. 11. Less than .5 percent of SME's 50,000 members are honored with Fellow status.

"To receive an award from SME, which covers a broad range of disciplines, is very personally satisfying, and is a great honor," Maguire said.

Maguire earned his undergraduate degree in chemistry and his doctorate degree in physical chemistry from University of Ulster, Northern Ireland. He participated in a postdoctoral program in chemistry at the University of California at Los Angeles in 1977 and 1978 under the mentorship of John P. McTague, who served as acting science advisor to President Reagan and Executive Vice President Ford. His doctoral research focused on developing sensors based on the scattering of laser light, and measuring properties of materials nondestructively.

While continuing and expanding his interests in materials processing, Maguire was a senior research associate at the University of Amsterdam (1979-81), and was a lecturer at the University of Ulster (1981-84).

He also served as a regional Teaching Company Associate representative at the Institute of Mechanical Engineers at Westminster before taking an offer in the United States with General Electric-Aircraft Engines as a staff engineer (1984-89).

In 1989, he became a staff scientist at the Southwest Research Institute. He established a world-class research group in the areas of computer simulation of materials and processing, and pioneered efforts in the emerging field of intelligent materials processing.

In his current position as a materials research leader and principal engineer, Maguire has contributed to soft and interfacial matter research, and has developed material processing and new techniques in computer simulation and molecular dynamics. Advanced future material applications, such as high power radars, ultra lightweight airframe structures, and large adaptive-based optics require the development of new materials whose characteristics far exceed the capabilities of current materials.

Maguire's discoveries in the area of soft, interfacial, granular, and nanomaterials could provide new forms of matter with engineered properties and controlled structures.

"There are many new material possibilities and new structures of matter that are unlike anything that has ever existed on earth before. A materials scientist's job is to ask, 'Where are the limits,' 'How good can these materials be,' or 'Can I make something lighter than StyrofoamTM, stronger than diamond and harder than steel'," Maguire said.

"When a research organization really starts to explore the hard science behind these questions, the services of outstanding scientists and engineers and the implementation of interdisciplinary teams is imperative."

Maguire has published the results of his materials processing and manufacturing work in a wide range of scientific and technical literature and is the editor of the "Engineering Applications for Artificial Intelligence" Journal.

Celebrating its 70th anniversary, SME is considered the world's leading professional society supporting manufacturing education. SME has members in 70 countries and hundreds of chapters worldwide.

A Fellow of SME is a member recognized by the manufacturing community as a contributor to the social, technological and education aspects of the profession.

Maguire is one of only four members who will receive the honor this year. **@**